

LISTA 02 - PROBABILIDADE 1

①

$$\begin{array}{cccccc} 2 & 4 & 3 & 2 & 1 & 1 \\ P_1 & F_1 & F_2 & F_3 & F_4 & P_2 \end{array}$$

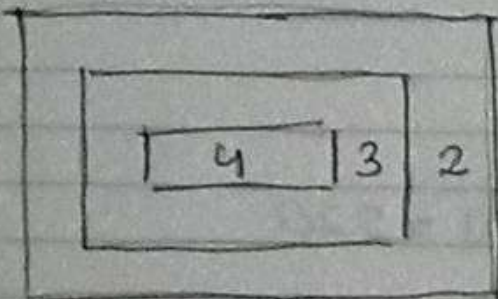
$$P_n P_m = P_2 \cdot P_4 = 2!4! = 2 \cdot 1 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 48$$

②

$$\begin{array}{ccccc} 8 & 7 & 6 & 5 & 4 \\ L_1 & L_2 & L_3 & L_4 & L_5 \end{array}$$

$$A_{n,p} = \frac{n!}{(n-p)!} = \frac{8!}{(8-5)!} = \frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3!}{3!} = 6.720$$

③



$$A_{n,p} = \frac{n!}{(n-p)!} = \frac{4!}{(4-3)!} = \frac{4!}{1!} = 4! = 24$$

④

$$C_{n,p} = \frac{n!}{(n-p)! p!} = \frac{11!}{(11-4)! 4!} = \frac{11 \cdot 10 \cdot 9 \cdot 8 \cdot 7!}{7! \cdot 4!} = 330$$

$$C_{m,f} = \frac{m!}{(m-f)! f!} = \frac{7!}{(7-3)! 3!} = \frac{7 \cdot 6 \cdot 5 \cdot 4!}{4! 3!} = 35$$

$$C_{n,p} \cdot C_{m,p} = 350 \cdot 35 = 11550$$

(5)

$$C_{3,1}^6 = \frac{3!}{(3-1)!1!} = \frac{3 \cdot 2!}{2! \cdot 1!} = 3$$

$$C_{8,4}^2 = \frac{8!}{(8-4)!4!} = \frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4!}{4!4!} = 70$$

$$C_{10,4}^n = \frac{10!}{(10-4)!4!} = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6!}{6! \cdot 4!} = 210$$

$$C_{6,2}^A = \frac{6!}{(6-2)!2!} = \frac{6 \cdot 5 \cdot 4!}{4! \cdot 2!} = 15$$

$$\frac{3}{G} \cdot \frac{70}{Z} \cdot \frac{210}{H} \cdot \frac{15}{A} = 661.500$$

(6)

$$C_{12,3} = \frac{12!}{(12-3)!3!} = \frac{12 \cdot 11 \cdot 10 \cdot 9!}{9!3!} = 220$$

(7)

$$A_{15,2} = \frac{15!}{(15-2)!2!} = \frac{15 \cdot 14 \cdot 13!}{13!2!} = 210$$

$$\frac{15}{P} \cdot \frac{14}{VP}$$

(8)

$$\underline{2^*} \underline{8} \underline{7} \underline{6} \underline{5} \underline{4} \underline{3} \underline{8^*}$$

$$N_1 N_2 N_3 N_4 N_5 N_6$$

$$A_{n,p} = \frac{n!}{(n-p)!} = \frac{8!}{(8-6)!} = \frac{8!}{2!} = \frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2!}{2!} = 20160$$

⑨

$$A_{n,p} = \frac{n!}{(n-p)!} = \frac{10!}{(10-6)!} = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4!}{4!} = 151200$$

⑩

$$\begin{array}{cccc} \underline{10} & \underline{9} & \underline{8} & \underline{7} \\ n_1 & n_2 & n_3 & n_4 \end{array}$$

$$A_{n,p} = \frac{n!}{(n-p)!} = \frac{10!}{(10-4)!} = \frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6!}{6!} = 5040$$